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Haruyo Fukui et al

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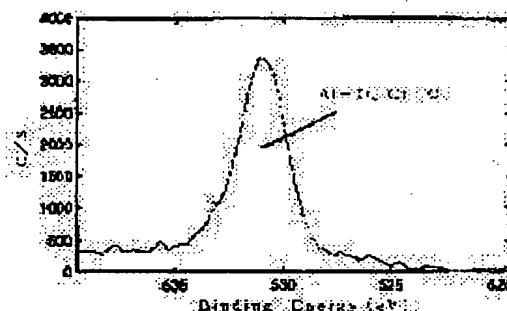
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(54) HARD COATING

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a hard coating, improving the high-temperature oxidation resisting characteristic, adhesion, and wear resistance of (AlCr)N series coating, and having high hardness.

SOLUTION: This hard coating is formed by arc discharge ion plating method. The hard coating is represented by $(Al_xCr_{1-x-y-z}Si_yM_z)(N_{1-\alpha-\beta-\gamma}BaC\beta O_\gamma)$. The hard coating has a diffraction strength on rock salt structure type (200) face by X-ray diffraction, half-power band width thereof is from 0.5° to 2.0° both inclusive, and the hard coating has binding energy of at least Al, Cr, M and/or Si and oxygen in the region of 525eV to 535eV in X-ray photoelectron spectral analysis. The reference signs, x, y, z, α , β , γ respectively designate atomic percentage. $0.45 < x < 0.85$, $0 \leq y < 0.35$, $0.50 \leq x+y+z < 1.0$, $0 < z < 0.20$, $0 \leq \alpha < 0.15$, $0 \leq \beta < 0.65$, $0 < \gamma < 0.65$, $0 < \alpha+\beta+\gamma \leq 1.0$, and M is selected from one or two or more kinds of elements among Ca, Mn, Sr, Y, Zr, Ce, Nd, Sm, Tb, Dy, Er and Yb.



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